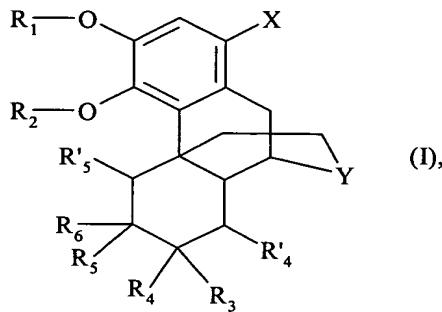


## LISTING OF CLAIMS

**Claims 1-30 (CANCELED)**

31. (NEW) A compound selected from those of formula (I) :



5 wherein

- $R_1$  represents alkyl,
- $R_2$  represents hydrogen, alkylcarbonyl, haloalkylcarbonyl or arylcarbonyl,
- $Y$  represents  $\begin{array}{c} >NR_7, >N^+O^- \\ | \quad | \\ R_7 \quad R_7 \end{array}$  or  $\begin{array}{c} >N^+R_7 \\ | \\ R'_7 \end{array} Z^-$

wherein R<sub>7</sub> and R'<sub>7</sub>, which may be identical or different, each represent alkyl and Z<sup>-</sup> represents a halogen anion,

- $R_3$  represents hydroxy or alkoxy,
- $R_4$  and  $R'_4$  each represent hydrogen or together form an additional bond, or  $R_3$  and  $R_4$  together form oxo or  $=N-OR_8$  (wherein  $R_8$  represents hydrogen or alkyl),
- $R_6$  represents hydroxy, alkylcarbonyloxy (wherein the alkyl moiety may be substituted by hydroxy, alkoxy, carboxy or alkyloxycarbonyl) or alkoxy,
- $R_5$  and  $R'_5$  each represent hydrogen or together form an additional bond, or  $R_5$  and  $R_6$  together form oxo,  $=N-OR_9$  or  $=N-NR_{10}R_{11}$  (wherein  $R_9$ ,  $R_{10}$ , and  $R_{11}$ , which may be the same or different, each represent hydrogen or alkyl),

- and X represents halogen,

it being understood that:

the compound of formula (I) may not represent 1-bromo-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one,

5 the term "alkyl" denotes an alkyl group having 1 to 6 carbon atoms which may be linear or branched, and

the term "alkoxy" denotes an alkyloxy group having 1 to 6 carbon atoms which may be linear or branched,

its enantiomers and diastereoisomers, and addition salts thereof with a pharmaceutically-acceptable acid or base.

10 32. (NEW) A compound of Claim 31, wherein R<sub>1</sub> represents methyl.

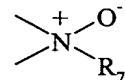
33. (NEW) A compound of Claim 31, wherein R<sub>2</sub> represents hydrogen.

34. (NEW) A compound of Claim 31, wherein R<sub>2</sub> represents alkylcarbonyl.

35. (NEW) A compound of Claim 31, wherein R<sub>2</sub> represents ethylcarbonyl.

15 36. (NEW) A compound of Claim 31, wherein Y represents NR<sub>7</sub>.

37. (NEW) A compound of Claim 31, wherein Y represents



38. (NEW) A compound of Claim 31, wherein X represents chlorine.

39. (NEW) A compound of Claim 31, wherein X represents bromine.

20 40. (NEW) A compound of Claim 31, wherein R<sub>3</sub> represents alkoxy.

41. (NEW) A compound of Claim 31, wherein R<sub>5</sub> represents hydrogen.

42. (NEW) A compound of Claim 31, wherein R<sub>6</sub> represents OH.

43. (NEW) A compound of Claim 31, wherein R<sub>6</sub> represents alkylcarbonyloxy.

44. (NEW) A compound of Claim 31, wherein R<sub>5</sub> and R<sub>6</sub> together form oxo.

5 45. (NEW) A compound of Claim 31, wherein R<sub>5</sub> and R<sub>6</sub> together form  $\text{---N=OH}$ .

46. (NEW) A compound of Claim 31, which is selected from (9 $\alpha$ ,13 $\alpha$ )-1-chloro-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-4,6-diol and addition salts thereof with a pharmaceutically-acceptable acid or base.

10 47. (NEW) A compound of Claim 31, which is selected from (9 $\alpha$ ,13 $\alpha$ )-1-chloro-3,7-dimethoxy-17-methyl-4-(propionyloxy)-7,8-didehydromorphinan-6-yl propionate and addition salts thereof with a pharmaceutically-acceptable acid or base.

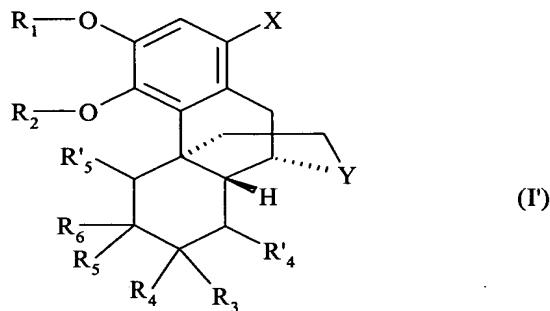
48. (NEW) A compound of Claim 31, which is selected from (9 $\alpha$ ,13 $\alpha$ )-1-bromo-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-4,6-diol and addition salts thereof with a pharmaceutically-acceptable acid or base.

15 49. (NEW) A compound of Claim 31, which is selected from (9 $\alpha$ ,13 $\alpha$ )-1-bromo-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one oxime and addition salts thereof with a pharmaceutically-acceptable acid or base.

50. (NEW) A compound of Claim 31, which is selected from (9 $\alpha$ ,13 $\alpha$ )-1-bromo-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one N-oxide and addition salts thereof with a pharmaceutically-acceptable acid or base.

51. (NEW) A compound of Claim 31, which is selected from (9 $\alpha$ ,13 $\alpha$ )-1-chloro-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one N-oxide and addition salts thereof with a pharmaceutically-acceptable acid or base.

52. (NEW) A compound of Claim 31, having the configuration shown by formula (I') :



5

and addition salts thereof with a pharmaceutically-acceptable acid or base.

53. (NEW) A method for treating a living animal body, including a human, afflicted with a condition selected from deficiencies of memory associated with cerebral aging and neurodegenerative diseases including Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias, comprising the step of administering to the living animal body, including a human, an amount of a compound of Claim 31 which is effective for the alleviation of the condition.

10

54. (NEW) A pharmaceutical composition useful for treating deficiencies of memory associated with cerebral ageing and neurodegenerative diseases including Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias, comprising as active principal an effective amount of a compound of Claim 31 together with one or more pharmaceutically-acceptable excipients or vehicles.

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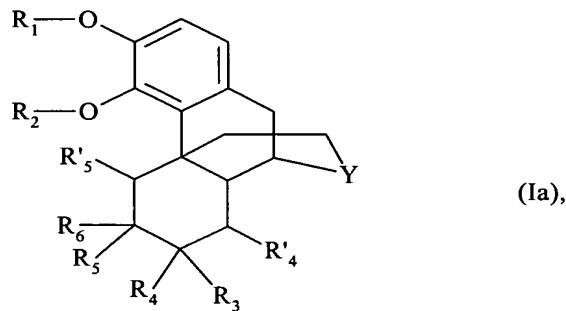
55. A method for treating a living animal body, including a human, afflicted with a condition selected from deficiencies of memory associated with cerebral aging and neurodegenerative diseases including Alzheimer's disease, Parkinson's disease, Pick's

disease, Korsakoff's disease, and frontal lobe and subcortical dementias, comprising the step of administering to the living animal body, including a human, an amount of sinomenine and/or a sinomenine compound which is effective for alleviation of the condition.

5 56. (NEW) The method of Claim 55, comprising administering a pharmaceutically effective amount of sinomenine.

57. (NEW) The method of Claim 55, comprising administering a pharmaceutically effective amount of a sinomenine compound.

58. (NEW) The method of Claim 55, wherein the sinomenine compound is selected from 10 those of formula (Ia) :



wherein

- R<sub>1</sub> represents alkyl,
- R<sub>2</sub> represents hydrogen, alkylcarbonyl, haloalkylcarbonyl or arylcarbonyl,
- Y represents  $\text{NR}_7$ ,  $\text{N}^+ \text{O}^- \text{R}_7$  or  $\text{N}^+ \text{R}_7 \text{R}'_7 \text{Z}^-$

15

wherein R<sub>7</sub> and R'<sub>7</sub>, which may be identical or different, each represent alkyl and Z<sup>-</sup> represents a halogen anion,

- R<sub>3</sub> represents hydroxy or alkoxy,
- R<sub>4</sub> and R'<sub>4</sub> each represent hydrogen or together form an additional bond,

or R<sub>3</sub> and R<sub>4</sub> together form oxo or =N-OR<sub>8</sub> (wherein R<sub>8</sub> represents hydrogen or alkyl),

- R<sub>6</sub> represents hydroxy, alkylcarbonyloxy (wherein the alkyl moiety may be substituted by hydroxy, alkoxy, carboxy or alkyloxycarbonyl) or alkoxy,
- R<sub>5</sub> and R'<sub>5</sub> each represent hydrogen or together form an additional bond, or R<sub>5</sub> and R<sub>6</sub> together form oxo, =N-OR<sub>9</sub> or =N-NR<sub>10</sub>R<sub>11</sub> (wherein R<sub>9</sub>, R<sub>10</sub>, and R<sub>11</sub>, which may be the same or different, each represent hydrogen or alkyl),

it being understood that:

the term "alkyl" denotes an alkyl group having 1 to 6 carbon atoms which may be linear or branched and

the term "alkoxy" denotes an alkyloxy group having 1 to 6 carbon atoms which may be linear or branched,

its enantiomers and diastereoisomers, and addition salts thereof with a pharmaceutically-acceptable acid or base.

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**59.** (NEW) The method of Claim 55, wherein the sinomenine compound is selected from (9 $\alpha$ ,13 $\alpha$ )-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one hydrazone;

(7 $\alpha$ ,9 $\alpha$ ,13 $\alpha$ )-4-hydroxy-3,7-dimethoxy-17-methylmorphinan-6-one;

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(7 $\beta$ ,9 $\alpha$ ,13 $\alpha$ )-4-hydroxy-3,7-dimethoxy-17-methylmorphinan-6-one;

(9 $\alpha$ ,13 $\alpha$ )-3,7-dimethoxy-17-methyl-6-oxo-7,8-didehydromorphinan-4-yl propionate;

(9 $\alpha$ ,13 $\alpha$ )-3,4,7-trimethoxy-17-methyl-7,8-didehydromorphinan-6-one;

(9 $\alpha$ ,13 $\alpha$ )-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one oxime;

(9 $\alpha$ ,13 $\alpha$ )-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-4,6-diol;

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(9 $\alpha$ ,13 $\alpha$ )-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-one N-oxide;

(9 $\alpha$ ,13 $\alpha$ )-6-amino-3,7-dimethoxy-17-methylmorphinan-4-ol;

4- $\{(9\alpha,13\alpha)$ -4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-yl]-oxy} $\}-4$ -oxobutanoic acid;

(9 $\alpha$ ,13 $\alpha$ )-3,7-dimethoxy-17-methyl-4-(propionyloxy)-7,8-didehydromorphinan-6-yl propionate;

5 (9 $\alpha$ ,13 $\alpha$ )-17-benzyl-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-17-ium-6-one bromide;

(9 $\alpha$ ,13 $\alpha$ )-17-ethyl-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-17-ium-4,6-diol bromide;

10 (9 $\alpha$ ,13 $\alpha$ )-17-ethyl-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-17-ium-6-one bromide;

(9 $\alpha$ ,13 $\alpha$ )-4-(benzoyloxy)-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-yl benzoate;

(9 $\alpha$ ,13 $\alpha$ )-4-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-6-yl benzoate; and

15 (9 $\alpha$ ,13 $\alpha$ )-6-hydroxy-3,7-dimethoxy-17-methyl-7,8-didehydromorphinan-4-yl benzoate.

20 60. (NEW) A pharmaceutical composition for use in the treatment of deficiencies of memory associated with cerebral ageing and neurodegenerative diseases including Alzheimer's disease, Parkinson's disease, Pick's disease, Korsakoff's disease, and frontal lobe and subcortical dementias comprising as active principle an effective amount of sinomenine or a sinomenine compound, together with one or more pharmaceutically-acceptable excipients or vehicles.